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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/689,754

10/20/2003

Masaaki Kusumi

KOIKE-01100

6013

7590 02/21/2007
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EXAMINER

BERNATZ, KEVIN M

ART UNIT

PAPER NUMBER

1773

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/689,754

Applicant(s)

KUSUMI ET AL.

Examiner

Kevin M. Bernatz

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Response to Amendment

1. Amendments to claims 13 and 16, filed on November 20, 2006, have been entered in the above-identified application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Examiner's Comments

3. The Examiner notes that the present claims possess allowable subject matter (see below) and that minor amendments to claims 1, 7, 13, 14, 16 and 17 would place the case into condition for allowance. Applicants are invited to schedule an interview to discuss the Examiner's proposal for bringing the case into condition for allowance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 13 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "several" in claims 13 and 16 is a relative term which renders the claim indefinite. The term "several" is not defined by the claim, the specification does not

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provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Specifically, the Examiner notes that what one person may consider "several" is different than what another person may consider "several", especially with regard to an upper end point. For example, is "2" considered "several"? How about "24"? Or "100"? This rejection can be overcome by removing the thickness limitation with regard to the organic film or replacing "several" with a more definite range. For the purposes of evaluating the prior art, the Examiner has interpreted any thickness greater than or equal to 2 microns as meeting the requirement of "several".

Claim Rejections - 35 USC § 103

6. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kokai et al. (U.S. Patent No. 4,755,426) in view of Gonsel et al. (U.S. Patent App. No. 2002/0114980 A1) for the reasons of record as set forth in Paragraph No. 4 of the Office Action mailed on September 15, 2006.

7. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kokai et al. in view of Gonsel et al. as applied above, and further in view of applicants' admissions for the reasons of record as set forth in Paragraph No. 5 of the Office Action mailed on September 15, 2006.

8. Claims 1 – 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kokai et al. ('426) in view of Gonsel et al. ('980 A1) as applied above, and further in view of Skorjanec et al. (U.S. Patent No. 4,729,924) for the reasons of record as set forth in Paragraph No. 6 of the Office Action mailed on September 15, 2006.

9. Claims 7 – 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kokai et al. ('426) in view of Gonsel et al. ('980 A1) and applicants' admissions as applied above, and further in view of Skorjanec et al. ('924) for the reasons of record as set forth in Paragraph No. 7 of the Office Action mailed on September 15, 2006.

Allowable Subject Matter

10. Claims 13 and 16 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

11. The following is a statement of reasons for the indication of allowable subject matter: the thickness of the inorganic layer is deemed to be neither anticipated nor rendered obvious by the prior art of record, since the prior art of record teach a surface oxide layer as the "inorganic layer", and such a layer would not reasonably be expected to meet the thickness limitation recited in claims 13 and 16.

Response to Arguments

**12. The rejection of claims 1 – 12, 14, 15, 17 and 18 under 35 U.S.C § 103(a) –
Kokai et al. in view of Gunsel et al., alone or in view of various references**

Applicant(s) argue(s) that the prior art of record fail to teach or render obvious the claimed “intermediate layer” (*pages 6 and 7 of response*). The Examiner respectfully disagrees.

The Examiner deems that Applicants are arguing a matter of degree, and perhaps processing. The final stand-alone product in both cases would appear identical in that a slice taken through the sensor would have a portion that differed from each other in the “film thickness direction”. Whether this is deposited by two separate deposition steps or by simply changing the concentration of the deposited elements, the final product would still possess >1 layer. As such, the Examiner maintains that the final product effectively discloses embodiments possessing 4, 5, 6+ layers depending on how the composition gradient is varied in the Kokai et al. polymer layer (the Examiner notes that Kokai et al. *explicitly* disclose a 4 layer embodiment wherein the upper portion of the organic layer is taught to possess a higher oxygen content than the lower portion).

Applicants further argue that the “intermediate film is “a kind of the hard membrane”” (quotations in original), implying that the polymer film taught by Kokai et al. does not read on the intermediate film limitation (*pages 6 and 8 of response*). The Examiner respectfully disagrees.

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The Examiner notes that the elemental composition are the same for both the claimed and disclosed "layers". If the hardness difference is supported by the as-filed disclosure, then the Examiner acknowledges that claims distinguishing the layer by hardness may serve as a point of patentability. Presently, the claims merely recite "intermediate layer" and the elements that can form the layer.

Finally, Applicants argue that the Examiner is utilizing impermissible hindsight with regard to Skorjanec (*pages 9 – 11 of response*). The Examiner respectfully disagrees.

The Examiner notes that it is recognized by the courts that substitution of *art recognized* functional equivalents is within the knowledge of one of ordinary skill in the art when attempting to improve upon/optimize the prior art. A surface oxide layer or a surface nitride layer on a magnetic layer are both *art recognized functional equivalents*, per the teachings in Skorjanec et al. and the various pertinent prior art references cited by the Examiner. As such, the claimed invention wherein the sole distinguishing feature between the prior art and the teachings of Kokai et al. in view of Gonsel et al. is that the layer is a nitride layer versus the oxide layer taught by Kokai et al. is deemed to be obvious to one of ordinary skill in the art since one of ordinary skill in the art would have readily envisioned embodiments using both surface oxide coatings or surface nitride coatings.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

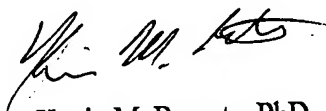
14. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Kevin M. Bernatz whose telephone number is (571) 272-1505. The Examiner can normally be reached on M-F, 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KMB
February 14, 2007



Kevin M. Bernatz, PhD
Primary Examiner